

What is claimed is:

1 1- A method of establishing a persistent relationship between an end user device  
2 and a server where the server is one of a plurality of servers managed by a dispatcher  
3 and the end user device accesses the server using a universal resource locator (URL),  
4 the method comprising the steps of:  
5 receiving, at the dispatcher, a request for information from the end user device;  
6 determining, by the dispatcher, which of the plurality of servers to select for  
7 satisfying the request;  
8 creating, at the selected server, a token comprising at least an identifier for the  
9 selected server, a date/time stamp, and a key, said key for accessing a storage area for  
10 information regarding the persistent relationship and the end user device;  
11 inserting the token into the URL; and,  
12 sending, by the selected server to the client device, a response with the token  
13 inserted into the URL.

14 2. A method as claimed in claim 1 wherein said token is encoded using a modified  
15 Base64 encoding.

16 3 - A method as claimed in claim 1 wherein said token has a checksum or hash  
17 verification field.

18 4. A method as claimed in claim 3 wherein said hash is a SHA-1 hash computed  
19 over said identifier for said selected server, said date/time stamp, and said key.

20 5. A method as claimed in claim 3 wherein said checksum or hash is encoded  
21 using a modified Base64 encoding.

22 6 - A method as claimed in claim 1 wherein said information regarding the persistent  
23 relationship is stored as a cookie on said server.

1 7- A method of routing a request by an end user device to a particular one of a  
2 plurality of redundant servers residing behind a network dispatching mechanism, said  
3 methods comprising the steps of:  
4 receiving, at the network dispatching mechanism, a request for information  
5 indicated by a uniform resource locator (URL);  
6 determining, at the network dispatching mechanism, if said URL contains a valid  
7 routing token;  
8 if said URL contains a valid routing token, further determining, at the network  
9 dispatching mechanism, if a session binding indicated by said routing token is old;  
10 if said URL contains a valid routing token and said routing token is not old,  
11 forwarding, by said network dispatching mechanism, the request, including the URL, to  
12 the particular server indicated by said valid routing token;  
13 removing, by said particular server, said valid routing information from the URL;  
14 storing, by said particular server, routing information removed from said valid  
15 routing token, where said valid routing information can be accessed subsequently by an  
16 outbound data stream filter during the processing of an outbound reply related to said  
17 request;  
18 accessing, by said particular server, a storage location where information  
19 regarding a session between the particular server and the end user device is stored;  
20 and  
21 inserting, by said particular server, said session information into said request.

1 8 - The method as claimed in claim 7 wherein additional filtering of the URL is done  
2 prior to the forwarding step.

1 9- The methods claimed in claim 1 thru 8 wherein all filtering is performed within the  
2 dispatcher.

1 10- A method of sending information to a requesting end user from an application  
2 over a session wherein said application resides at one of a plurality of redundant  
3 servers residing behind a network dispatcher, said method comprising the steps of:  
4 receiving response information from said application, said response information  
5 including a URL (uniform resource locator);  
6 determining if a key cookie has been used for storing session information  
7 between said end user and said application;  
8 if a key cookie has been used for storing session information, retrieving a  
9 session key from said key cookie;  
10 if a key cookie was not used for storing session information, retrieving said  
11 session key from a control block;  
12 removing all cookies from said response information;  
13 storing said removed cookies in a predetermined storage area;  
14 updating said URL to indicate the removal of said cookies;  
15 creating a sticky routing string;  
16 updating a date/time stamp in said sticky routing string;  
17 inserting said sticky routing string into said URL; and  
18 transmitting said response information, including said URL, to said end user.

11- A method as claimed in claim 10 wherein, prior to said determining step, said  
response information is transmitted from said application through one or more filters.

1 12- A computer program product having computer readable code means of  
2 establishing a persistent relationship between an end user device and a server where  
3 the server is one of a plurality of servers managed by a dispatcher and the end user  
4 device accesses the server using a universal resource locator (URL), the computer  
5 program product comprising:  
6 computer readable code means of receiving, at the dispatcher, a request for  
7 information from the end user device;

8 computer readable code means of determining, by the dispatcher, which of the  
9 plurality of servers to select for satisfying the request;

10 compeer readable code means of creating, at the selected server, a token  
11 comprising at least an identifier for the selected server, a date/time stamp, and a key,  
12 said key for accessing a storage area for information regarding the persistent  
13 relationship and the end user device;

14 computer readable code means of inserting the token into the URL; and,

15 computer readable code mans of sending, by the selected server to the client  
16 device, a response with the token inserted into the URL.

1 13 - A computer program product as claimed in claim 12 wherein said token is  
2 encoded using a modified Base64 encoding.

1 14 - A computer program product as claimed in claim 12 wherein said token has a  
2 checksum or hash verification field.

1 15 - A computer program product as claimed in claim 14 wherein said hash is a  
2 SHA-1 hash computed over said identifier for said selected server, said date/time  
3 stamp, and said key.

1 16 - A computer program product as claimed in claim 14 wherein said checksum or  
2 hash is encoded using a modified Base64 encoding.

1 17 - A computer program product as claimed in claim 12 wherein said information  
2 regarding the persistent relationship is stored as a cookie on said server.

1 18 - A computer program product having computer readable program code for routing  
2 a request by an end user device to a particular one of a plurality of redundant servers  
3 residing behind a network dispatching mechanism, said program product comprising:

4 computer readable program code for receiving, at the network dispatching  
5 mechanism, a request for information indicated by a uniform resource locator (URL);  
6 computer readable program code for determining, at the network dispatching  
7 mechanism, if said URL contains a valid routing token;  
8 if said URL contains a valid routing token, computer readable program code for  
9 determining, at the network dispatching mechanism, if a session binding indicated by  
10 said routing token is old;  
11 if said URL contains a valid routing token and said routing token is not old,  
12 computer readable program code for forwarding, by said network dispatching  
13 mechanism, the request, including the URL, to the particular server indicated by said  
14 valid routing token;  
15 computer readable program code for removing, by said particular server, said  
16 valid routing information from the URL;  
17 computer readable program code for storing, by said particular server, routing  
18 information removed from said valid routing token, where said valid routing information  
19 can be accessed subsequently by an outbound data stream filter during the processing  
20 of an outbound reply related to said request;  
21 computer readable program code for accessing, by said particular server, a  
22 storage location where information regarding a session between the particular server  
23 and the end user device is stored; and  
24 computer readable program code for inserting, by said particular server, said  
25 session information into said request.

1 19 - The computer program product as claimed in claim 18 wherein additional filtering  
2 of the URL is done prior to the forwarding step.

1 20- A computer program product having computer readable program means of  
2 sending information to a requesting end user from an application over a session  
3 wherein said application resides at one of a plurality of redundant servers residing  
4 behind a network dispatcher, said computer program product comprising:

5 computer readable programming means of receiving response information from  
 6 said application, said response information including a URL (uniform resource locator);  
 7 computer readable programming means of determining if a key cookie has been  
 8 used for storing session information between said end user and said application;  
 9 if a key cookie has been used for storing session information, computer readable  
 10 programming means of retrieving a session key from said key cookie;  
 11 if a key cookie was not used for storing session information, computer readable  
 12 programming means of retrieving said session key from a control block;  
 13 computer readable programming means of removing all cookies from said  
 14 response information;  
 15 computer readable programming means of storing said removed cookies in a  
 16 predetermined storage area;  
 17 computer readable programming means of updating said URL to indicate the  
 18 removal of said cookies;  
 19 computer readable programming means of creating a sticky routing string;  
 20 computer readable programming means of updating a date/time stamp in said  
 21 sticky routing string;  
 22 computer readable programming means of inserting said sticky routing string into  
 23 said URL; and  
 24 computer readable programming means of transmitting said response  
 25 information, including said URL, to said end user.

1 21- A computer program product as claimed in claim 20 wherein, prior to said  
 2 determining step, said response information is transmitted from said application through  
 3 one or more filters.

1 ~~22~~ - A network dispatcher for establishing a persistent relationship between an end  
 2 user device and a server where the server is one of a plurality of servers managed by  
 3 said network dispatcher, said network dispatcher comprising:

4 means for receiving a request for information from said end user device, said  
5 request for information including a uniform resource locator (URL);

6 means for determining which of the plurality of servers to select for satisfying  
7 said request for information;

8 means for creating, at said selected server, a token comprising at least an  
9 identifier for the selected server, a date/time stamp, and a key, said key for accessing a  
10 storage area for information regarding the persistent relationship and the end user  
11 device;

12 means for inserting the token into the URL; and

13 means for sending, by the selected server, a response with the token inserted  
14 into the URL to the client device.

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1 23 - A network dispatcher as claimed in claim 22 wherein said token is encoded using  
2 a modified Base64 encoding.

1 24 - A network dispatcher as claimed in claim 22 wherein said token has a checksum  
2 or hash verification field.

1 25 - A network dispatcher as claimed in claim 24 wherein said hash is a SHA-1 hash  
2 computed over said identifier for said selected server, said date/time stamp, and said  
3 key.

1 26 - A network dispatcher as claimed in claim 24 wherein said checksum or hash is  
2 encoded using a modified Base64 encoding.

1 27 - A network dispatcher as claimed in claim 22 wherein said information regarding  
2 the persistent relationship is stored as a cookie on said server.